

## **Section 3.0 – Mitigation Monitoring and Reporting Program**

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### 3.0 MITIGATION MONITORING AND REPORTING PROGRAM

The California Environmental Quality Act (CEQA) requires that when a public agency completes an environmental document which includes measures to mitigate or avoid significant environmental effects, the public agency must adopt a reporting or monitoring program. This requirement ensures that environmental impacts found to be significant will be mitigated. The reporting or monitoring program must be designed to ensure compliance during project implementation (Public Resources Code Section 21081.6).

In compliance with Public Resources Code Section 21081.6, Table 1, *Mitigation Monitoring and Reporting Checklist*, has been prepared for the Department of Water and Power Specific Plan Amendment (the project). This Mitigation Monitoring and Reporting Checklist is intended to provide verification that all applicable Conditions of Approval relative to significant environmental impacts are monitored and reported. Monitoring will include: 1) verification that each mitigation measure has been implemented; 2) recordation of the actions taken to implement each mitigation; and 3) retention of records in the Department of Water and Power Specific Plan Amendment project file.

This Mitigation Monitoring and Reporting Program delineates responsibilities for monitoring the project, but also allows the City flexibility and discretion in determining how best to monitor implementation. Monitoring procedures will vary according to the type of mitigation measure. Adequate monitoring consists of demonstrating that monitoring procedures took place and that mitigation measures were implemented. This includes the review of all monitoring reports, enforcement actions, and document disposition, unless otherwise noted in the Mitigation Monitoring and Reporting Checklist (Table 1). If an adopted mitigation measure is not being properly implemented, the designated monitoring personnel shall require corrective actions to ensure adequate implementation.

Reporting consists of establishing a record that a mitigation measure is being implemented, and generally involves the following steps:

- The City distributes reporting forms to the appropriate entities for verification of compliance.
- Departments/agencies with reporting responsibilities will review the Initial Study, which provides general background information on the reasons for including specified mitigation measures.
- Problems or exceptions to compliance will be addressed to the City as appropriate.
- Periodic meetings may be held during project implementation to report on compliance of mitigation measures.

- Responsible parties provide the City with verification that monitoring has been conducted and ensure, as applicable, that mitigation measures have been implemented. Monitoring compliance may be documented through existing review and approval programs such as field inspection reports and plan review.
- The City prepares a reporting form periodically during the construction phase and an annual report summarizing all project mitigation monitoring efforts.
- Appropriate mitigation measures will be included in construction documents and/or conditions of permits/approvals.

Minor changes to the Mitigation Monitoring and Reporting Program, if required, would be made in accordance with CEQA and would be permitted after further review and approval by the City. No change will be permitted unless the Mitigation Monitoring and Reporting Program continues to satisfy the requirements of Public Resources Code Section 21081.6.

**Table 1**  
**MITIGATION MONITORING AND REPORTING CHECKLIST**

Mitigation Number	Mitigation Measure	Implementation Responsibility	Timing	Monitoring Responsibility	Timing	VERIFICATION OF COMPLIANCE		
						Initials	Date	Remarks
AESTHETICS								
AES-1	Prior to issuance of any grading and/or demolition permits, whichever occurs first, a Construction Management Plan shall be submitted for review and approval by the Director of Development Services. The Construction Management Plan shall, at a minimum, indicate the equipment and vehicle staging areas, stockpiling of materials, fencing (i.e., temporary fencing with opaque material), and haul route(s). Staging areas shall be sited and/or screened in order to minimize public views to the maximum extent practicable. Construction haul routes shall minimize impacts to sensitive uses in the City.	Applicant/ Contractor	Prior to Issuance of Grading/ Demolition Permits	Director of Development Services	Prior to Issuance of Grading/ Demolition Permits			
AES-2	All construction-related lighting shall be located and aimed away from adjacent residential areas and consist of the minimal wattage necessary to provide safety and security at the construction site. A Construction Safety Lighting Plan shall be approved by the City Engineer prior to issuance of the grading permit application.	Contractor	Prior to Issuance of Grading/ Demolition Permits; During Construction	City Engineer	Prior to Issuance of Grading/ Demolition Permits; During Construction			

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AES-3	The project applicant shall ensure that any proposed exterior lighting fixtures, with respect to both the direction of lighting and its intensity in the private right of way and on private property, do not result in lighting spill over onto the adjacent uses. The project applicant shall prepare and submit an Outdoor Lighting Plan for both street lights and future residential uses to the Development Services Department for review and approval, prior to issuance of a grading permit. The Plan shall demonstrate compliance with all applicable Code lighting requirements and include a footcandle map illustrating the amount of light from the project site at adjacent light sensitive receptors. All exterior light fixtures (including street lighting) shall be shielded or directed away from adjoining uses. Landscape lighting levels shall respond to the type, intensity, and location of use.	Applicant	Prior to Issuance of Grading Permit	Director of Development Services	Site Development Permit; Prior to Issuance of Occupancy Permit; Plan Check			
<b>BIOLOGICAL RESOURCES</b>								
BIO-1	To the extent feasible, all vegetation removal activities shall be scheduled outside of the nesting season (typically February 15 to August 15) to avoid potential impacts to nesting birds. However, if initial vegetation removal occurs during the nesting season, all suitable habitat shall be thoroughly surveyed for the presence of nesting birds by a qualified biologist prior to	Applicant/ Contractor	Prior to Issuance of a Grading Permit; During Construction	Director of Development Services	Prior to Issuance of a Grading Permit; During Construction			

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	commencement of clearing. If any active nests are detected, a buffer of at least 100 feet (300 feet for raptors) shall be delineated, flagged, and avoided until the nesting cycle is complete as determined by the City.							
<b>CULTURAL RESOURCES</b>								
CUL-1	An archaeologist and a Native American Monitor appointed by the City of Seal Beach shall be present during earth removal or disturbance activities related to rough grading and other excavation for utilities. If any earth removal or disturbance activities result in the discovery of cultural resources, the Project proponent's contractors shall cease all earth removal or disturbance activities in the vicinity and immediately notify the City selected archaeologist and/or Native American Monitor, who shall immediately notify the Director of Development Services. The City selected archaeologist shall evaluate all potential cultural findings in accordance with standard practice, the requirements of the City of Seal Beach Cultural Resources Element, and other applicable regulations. Consultation with the Native American Monitor, the Native American Heritage Commission, and data/artifact recovery, if deemed appropriate, shall be conducted.	Applicant/ Contractor	During Grading	Director of Development Services	Prior to Issuance of a Grading Permit; During Grading			

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CUL-3	Should any human bone be encountered during any earth removal or disturbance activities, all activity shall cease immediately and the City selected archaeologist and Native American monitor shall be immediately contacted, who shall then immediately notify the Director of Development Services. The Director of Development Services shall contact the Coroner pursuant to Sections 5097.98 and 5097.99 of the Public Resources Code relative to Native American remains. Should the Coroner determine the human remains to be Native American, the Native American Heritage Commission shall be contacted pursuant to Public Resources Code Section 5097.98.	Applicant/ Contractor	During Grading	Director of Development Services	During Grading			
CUL-4	<p>If more than one Native American burial is encountered during any earth removal or disturbance activities, a “Mitigation Plan” shall be prepared and subject to approval by the City of Seal Beach Development Services Department. The Mitigation Plan shall include the following procedures:</p> <p><u>Continued Native American Monitoring</u></p> <ul style="list-style-type: none"> <li>All ground disturbance in any portions of the project area with the potential to contain human remains or other cultural</li> </ul>	Applicant/ Contractor	During Grading	Director of Development Services	During Grading			



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	<p>material shall be monitored by a Native American representative of the Most Likely Descendant (MLD). Activities to be monitored shall include rough grading and grading of previously undisturbed deposit, with the exception of contexts that are clearly within undisturbed soil profiles.</p> <ul style="list-style-type: none"> <li>• Exposure and removal of each burial shall be monitored by a Native American. Where burials are clustered and immediately adjacent, one monitor is sufficient for excavation of two adjoining burials.</li> <li>• Excavation of test units shall be monitored. Simultaneous excavation of two test units if less than 20 feet apart may be monitored by a single Native American.</li> <li>• If screening of soil associated with burials or test units is done concurrently with and adjacent to the burial or test unit, the Native American responsible for that burial or test unit will also</li> </ul>							

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	<p>monitor the screening. If the screening is done at another location, a separate monitor shall be required.</p> <ul style="list-style-type: none"> <li>All mechanical excavation conducted in deposits that may contain human remains (i.e., all areas not completely within undisturbed soil profiles) shall be monitored by a Native American.</li> </ul> <p><u>Notification Procedures for New Discoveries</u></p> <ul style="list-style-type: none"> <li>When possible burials are identified during monitoring of mechanical excavation, or excavation of test units, the excavation shall be temporarily halted while the find is assessed in consultation with the lead field archaeologist. If the find is made during mechanical excavation, the archaeologist or Native American monitoring the activity shall have the authority to direct the equipment operator to stop while the find is assessed. If it is determined that the find does not constitute a burial, the</li> </ul>							

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	<p>mechanical excavation shall continue.</p> <ul style="list-style-type: none"> <li>If the find is determined to be a human burial, the lead archaeologist shall immediately notify the Site Supervisor for the developer, as well as the Principal Investigator. The Principal Investigator shall immediately notify the MLD and the Director of Development Services for the City of Seal Beach.</li> </ul> <p><u>Identification of Additional Burials</u></p> <ul style="list-style-type: none"> <li>For all discovered human burials, attempts shall continue to be made to locate additional burials nearby through hand excavation techniques. This shall be done through the excavation of 1 x 1 meter exploratory test units (ETUs) placed along transects extending radially from each identified burial or burial cluster. The spacing of the ETUs shall be determined upon consultation with the Project Archaeologist and the MLD. The radial</li> </ul>							

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	<p>transects shall be designed to test areas within 50 feet (15 meters) from the edge of each burial or burial cluster. Excavation of these units shall be limited to areas containing intact cultural deposit (i.e., areas that have not been graded to the underlying undisturbed soil profiles) and shall be excavated until the undisturbed soil profiles are encountered, or to the excavation depth required for the approved grading plan. The soil from the ETUs along the radial transects shall be screened only if human remains are found in that unit.</p> <ul style="list-style-type: none"> <li>Controlled grading shall be conducted within these 50-foot heightened investigation areas with a wheeled motor grader. The motor grader shall use an angled blade that excavates 1 to 2 inches at a pass, pushing the soil to the side to form a low windrow. Monitors shall follow about 20 feet behind the motor grader, examining the ground for evidence of burials.</li> </ul>							

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	<ul style="list-style-type: none"> <li>When a burial is identified during controlled grading, the soil in windrows that may contain fragments of bone from that burial shall be screened. At a minimum this shall include the soil in the windrow within 50 feet of the burial in the direction of the grading.</li> <li>If additional burials are found during controlled grading, additional ETUs will be hand excavated in the radial patterns described above.</li> </ul> <p><u>Burial Removal and Storage</u></p> <ul style="list-style-type: none"> <li>Consultation with the MLD shall occur regarding the treatment of discovered human burials. If the MLD determines it is appropriate to have discovered human remains pedestaled for removal, that activity shall be conducted in a method agreed to by the MLD.</li> <li>After pedestaling or other agreed upon burial removal program is completed, the top of a burial shall be covered with paper towels to act as a cushion, and</li> </ul>							

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	<p>then a heavy ply plastic will be placed over the top to retain surface moisture. Duct tape shall be wrapped around the entire pedestal, securing the plastic bag and supporting the pedestal. Labels shall be placed on the plastic indicating the burial number and the direction of true north in relation to the individual burial. Sections of rebar shall be hammered across the bottom of the pedestal and parallel to the ground. When a number of parallel rebar sections have been placed this way, they shall be lifted simultaneously, cracking the pedestal loose from the ground. The pedestal shall then be pushed onto a thick plywood board and lifted onto a pallet. A forklift shall carry the pallet to a secure storage area or secure storage containers located on the subject property.</p> <ul style="list-style-type: none"> <li>If another agreed upon burial removal program is utilized, that method shall be carried out in a manner agreed upon after consultation with the MLD and concurrence by the Director of Development Services.</li> </ul>							

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	<u>Study of Burial Remains</u> <ul style="list-style-type: none"> <li>If the burials are removed in pedestal and are incompletely exposed, osteological studies are necessarily limited to determination (if possible) of age, sex, position, orientation, and trauma or pathology. After consultation, and only upon written agreement by the MLD, additional studies that are destructive to the remains may be undertaken, including radiocarbon dating of bone or DNA studies. If the MLD determines that only non-destructive additional studies may be allowed, one shell may be removed from each burial and submitted for radiocarbon dating. The assumption here is that the shell would have been part of the fill for the burial pit, and therefore would provide a maximum age for the burial.</li> <li>The MLD may indicate a willingness to consider some additional exposure and study of the skeletal material removed from the sites. Such study</li> </ul>							

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	<p>would not involve removal of the remains from the project area, but rather would be undertaken near the storage area. To the extent allowed by the MLD, the bones would be further exposed within the existing pedestals or other medium containing the human remains and additional measurements taken. Consultation with the MLD regarding the feasibility of these additional studies prior to reburial would occur.</p> <p><u>Repatriation of Burials and Associated Artifacts</u></p> <ul style="list-style-type: none"> <li>Once all portions of the project area have been graded to the underlying culturally sterile marine terrace deposits, or to the excavation depth required for the approved grading plan, the repatriation process shall be initiated for all recovered human remains and associated artifacts. Once a reburial site has been identified and prepared, the remains and associated artifacts shall be transported from the secure storage area to the site for</li> </ul>							



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	<p>reburial. Appropriate ceremony will be undertaken during this process at the discretion of the MLD.</p> <p><u>Additional Studies</u></p> <p>Considerable additional data relating to regional research issues may be uncovered if substantial numbers of human burials and other archaeological features are encountered during the construction monitoring for the development. If this occurs, additional analysis shall be conducted. The analysis shall be designed to more completely address the research issues discussed in the approved "Research Design," and to provide additional mitigation of impacts to the sites in light of the new finds. The following studies would be potentially applicable:</p> <ul style="list-style-type: none"> <li>• <u>Radiocarbon Dating.</u> In considering the implications of the burials in interpreting site use and regional settlement, it is critical to assess the time range represented by the interments. Do they correspond to the full temporal range of site use, or only a limited timeframe? Although direct dating of the</li> </ul>							

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	<p>bones may not be possible due to the destructive nature of the radiocarbon technique, the MLD may approve the removal of a single shell from the interior of each burial for dating. Although this shall not provide a direct date of the burial, assuming the shell was part of the burial fill it should provide a maximum age (that is, the burial should not be older than the shell). In addition, an equivalent number of additional samples from non-burial contexts would also be taken for comparative purposes. These data would provide a more secure measure of the intensity of occupation during different periods.</p> <ul style="list-style-type: none"> <li>• <u>Animal Interments.</u> Animal interments may be discovered within the project area. Because these are not human remains, somewhat more intensive study is possible. Because these features are uncommon and represent very culture-specific religious practices, they are useful in reconstructing cultural areas during certain times in prehistory. Analysis of animal</li> </ul>							

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	<p>interments will include: (1) exposure to determine burial position; (2) photo documentation; (3) examination of skeleton for age/sex; traumatic injury, pathology, butchering, or other cultural modification; (4) radiocarbon dating; and (5) examination of grave dirt for evidence of grave goods or stomach contents.</p> <p><u>Curation</u></p> <p>Cultural materials recovered from the cultural resources monitoring and mitigation program for the development shall be curated either at an appropriate facility in Orange County, or, in consultation with the City, at the San Diego Archaeological Center.</p> <p><u>Preparation of Final Report</u></p> <p>The final technical report shall be prepared and submitted to the City within 12 months of the completion of the archeological field work. The report shall conform to the guidelines developed by the California Office of Historic Preservation for Archaeological Resource Management Reports (ARMR). It will be prepared in sufficient quantity to</p>							

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	distribute to interested regional researchers and Native American groups. It shall thoroughly document and synthesize all of the findings from all phases of the cultural resources program. Funding shall be provided by the landowner.							
<b>TRAFFIC/CIRCULATION</b>								
TRA-1	<p>Prior to Issuance of any grading and/or demolition permits, whichever occurs first, a Construction Management Plan shall be submitted for review and approval by the Director of Development Services. The Construction Management Plan shall, at a minimum, address the following:</p> <ul style="list-style-type: none"> <li>Traffic control for any street closure, detour, or other disruption to traffic circulation.</li> <li>Identify the routes that construction vehicles will utilize for the delivery of construction materials (i.e., lumber, tiles, piping, windows, etc.), to access the site, traffic controls and detours, and proposed construction phasing plan for the project.</li> </ul>	Applicant/ Contractor	Prior to Issuance of Grading/ Demolition Permits	Director of Development Services; City Engineer	Prior to Issuance of Grading/ Demolition Permits; During Construction			

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	<ul style="list-style-type: none"> <li>Specify the hours during which transport activities can occur and methods to mitigate construction-related impacts to adjacent streets.</li> <li>Require the Applicant to keep all haul routes clean and free of debris, including but not limited to gravel and dirt as a result of its operations. The Applicant shall clean adjacent streets, as directed by the City Engineer (or representative of the City Engineer), of any material which may have been spilled, tracked, or blown onto adjacent streets or areas.</li> <li>Hauling or transport of oversize loads shall be allowed between the hours of 9:00 AM and 3:00 PM only, Monday through Friday, unless approved otherwise by the City Engineer. No hauling or transport will be allowed during nighttime hours, weekends, or Federal holidays.</li> <li>Use of local streets shall be prohibited.</li> </ul>							

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	<ul style="list-style-type: none"> <li>Haul trucks entering or exiting public streets shall at all times yield to public traffic.</li> <li>If hauling operations cause any damage to existing pavement, streets, curbs, and/or gutters along the haul route, the applicant shall be fully responsible for repairs. The repairs shall be completed to the satisfaction of the City Engineer.</li> <li>All constructed-related parking and staging of vehicles shall be kept out of the adjacent public roadways and shall occur on-site or in public parking lots.</li> </ul> <p>This Plan shall meet standards established in the current California Manual on Uniform Traffic Control Device (MUTCD) as well as City of Seal Beach requirements.</p>							
TRA-2	Prior to issuance of any grading permits, a Landscape Plan shall be submitted to the City Engineer verifying that all landscaping and/or hardscapes shall be designed such that a driver's clear line of sight is not obstructed and does not threaten vehicular or pedestrian safety consistent with Figure 10-1, <i>Site Distance</i>	Applicant	Prior to Issuance of Grading Permit	City Engineer	Prior to Issuance of Grading Permit; Plan Check			

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	<i>Analysis Project Access Points at Marina Drive, and Figure 10-2, Site Distance Analysis Project Access Points at First Street, of the Traffic Impact Analysis Report for the Ocean Place Residential Project (Traffic Impact Analysis), prepared by Linscott, Law &amp; Greenspan Engineers (October 27, 2011). The Traffic Impact Analysis is included in Appendix 11.5, Traffic Impact Analysis of this EIR and is incorporated by reference into this mitigation measure.</i>							
TRA-3	Prior to the issuance of any building permits, a “STOP” sign and stop bar shall be installed at the project driveway (‘A’ Street) and alley (Alley ‘A’) on Marina Drive and at the project driveway (‘B’ Street) and alley (Alley ‘B’) on 1 <sup>st</sup> Street. Appropriate striping, signage, and/or pavement legends shall also be installed in accordance with Seal Beach standards. These improvements shall be indicated on the grading plan and Final Tentative Tract Map and shall be submitted to the City Engineer for review and approval.	Applicant	Prior to Issuance of Building Permit	City Engineer	Prior to Issuance of Building Permit; Plan Check			
TRA-4	South of Marina Drive, the project applicant shall restripe 1 <sup>st</sup> Street within the proposed 40-foot paved cross section to provide one 16-foot southbound departure lane, a 10-foot northbound left-turn lane, and a 14-foot northbound shared through/right-turn lane. South of Marina Drive, the project applicant shall modify the existing median and roadway	Applicant	Prior to Issuance of Grading Permit	City Engineer	Prior to Issuance of Grading Permit			

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	cross section to minimize the offset through the intersection and realign the southbound approach with the proposed northbound approach on 1 <sup>st</sup> Street. Within a recommended paved cross section of 40-feet, the project applicant shall provide one 16-foot northbound departure lane, a 10-foot southbound left-turn lane, and a 14-foot southbound right-turn lane shall be maintained. These improvements shall be installed prior to the issuance of any building permits, and shall also be indicated on the grading plan and Final Tentative Tract Map and shall be submitted to the City Engineer for review and approval.							
<b>AIR QUALITY</b>								
AQ-1	Prior to issuance of any Grading Permit, the Director of Public Works and the Building Official shall confirm that the Grading Plan, Building Plans, and specifications stipulate that, in compliance with SCAQMD Rule 403, excessive fugitive dust emissions shall be controlled by regular watering or other dust prevention measures, as specified in the SCAQMD's Rules and Regulations. In addition, SCAQMD Rule 402 requires implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off-site. Implementation of the following	Applicant/ Contractor	Prior to Finalization of Grading Plans, Building Plans, and Specifications; During Construction	City Engineer and the Chief Building Official or Designee	Prior to Finalization of Grading Plans, Building Plans, and Specifications; During Construction			



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	<p>measures would reduce short-term fugitive dust impacts on nearby sensitive receptors:</p> <ul style="list-style-type: none"> <li>• All active portions of the construction site shall be watered at least twice daily to prevent excessive amounts of dust;</li> <li>• On-site vehicle speed shall be limited to 15 miles per hour;</li> <li>• All on-site roads shall be paved where feasible, watered as needed (to maintain a moisture content of 12 percent), or chemically stabilized;</li> <li>• Visible dust beyond the property line which emanates from the project shall be prevented to the maximum extent feasible;</li> <li>• All material transported off-site shall be either sufficiently watered or securely covered to prevent excessive amounts of dust prior to departing the job site;</li> </ul>							

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	<ul style="list-style-type: none"> <li>Track-out devices shall be used at all construction site access points;</li> <li>All delivery truck tires shall be watered down and/or scraped down prior to departing the job site;</li> <li>Replace ground cover on disturbed areas quickly; and</li> <li>Implement street sweeping program with Rule 1186-compliant PM<sub>10</sub> efficient vacuum units.</li> </ul>							
AQ-2	All trucks that are to haul excavated or graded material on-site shall comply with State Vehicle Code Section 23114 (Spilling Loads on Highways), with special attention to Sections 23114(b)(F) and (e)(4) as amended, regarding the prevention of such material spilling onto public streets and roads. Prior to the issuance of grading permits, the Applicant shall coordinate with the appropriate City of Seal Beach Engineer on hauling activities compliance.	Applicant and Contractor	Prior to Issuance of a Grading Permit, During Construction	City Engineer and the Chief Building Official or Designee	Prior to Issuance of a Grading Permit; During Construction			

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NOISE								
N-1	<p>Prior to Grading Permit issuance, the project shall demonstrate, to the satisfaction of the Seal Beach Development Services Department that the project complies with the following:</p> <ul style="list-style-type: none"><li>Construction contracts specify that all construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers and other State required noise attenuation devices.</li><li>The Applicant shall provide, to the satisfaction of the City of Seal Beach Development Services Department, a qualified “Noise Disturbance Coordinator.” The Disturbance Coordinator shall be responsible for responding to any local complaints about construction noise. When a complaint is received, the Disturbance Coordinator shall notify the City within 24-hours of the complaint and determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and shall implement reasonable</li></ul>	Contractor	Prior to Issuance of a Grading Permit	Director of Development Services	Prior to Issuance of a Grading Permit; During Construction			

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	<p>measures to resolve the complaint, as deemed acceptable by the City Development Services Department. The contact name and the telephone number for the Disturbance Coordinator shall be clearly posted on-site.</p> <ul style="list-style-type: none"> <li>• Solid noise attenuation barriers (temporary barriers or noise curtains) with a sound transmission coefficient (STC) of at least 20 shall be used along the eastern project boundary (along 1<sup>st</sup> Street) during the construction grading phase only. Noise attenuation barriers constructed at the property lines to a height of 10 feet with an STC rating of at least 20 are capable of reducing noise levels by 7.7 dBA.</li> <li>• When feasible, construction haul routes shall be designed to avoid noise sensitive uses (e.g., residences, convalescent homes, etc.).</li> </ul>							

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	<ul style="list-style-type: none"> <li>During construction, stationary construction equipment shall be placed such that emitted noise is directed away from sensitive noise receivers.</li> <li>Construction activities shall not take place outside of the allowable hours specified by the City's <i>Municipal Code Section 7.15.025</i> (7:00 a.m. and 8:00 p.m. on weekdays, 8:00 a.m. and 8:00 p.m. on Saturdays, and 9:00 a.m. and 8:00 p.m. on Sundays or holidays).</li> </ul>							
<b>GEOLOGY AND SOILS</b>								
GEO-1	Prior to issuance of any grading permit, the project applicant shall prepare a Final Soils/Geotechnical Engineering Report for review and approval by the City's Engineer. The Final Soils Geotechnical Engineering Report shall be prepared by a professional engineer and certified engineering geologist licensed by the State of California, in consultation with a corrosion engineer, and demonstrate compliance with the following recommendations identified in the <i>Preliminary Geotechnical Evaluation for Proposed Residential Development</i> , prepared by GeoTek, Inc., dated September 12, 2005, and the <i>Geology, Soils, and Seismicity Report in</i>	Applicant	Prior to Issuance of Grading Permit	City Engineer	Prior to Issuance of Grading Permit			

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	<p><i>Support of DWP Specific Plan Amendment EIR, Seal Beach California</i>, prepared by D. Scott Magorien, C.E.G. Consulting Engineering Geologist, dated June 27, 2011, and any additional recommendations identified by the City's Engineer. The Preliminary Geotechnical Evaluation and Geology Report are included in <u>Appendix 11.8, <i>Geology, Soils, and Seismicity Data</i></u> of this EIR and are incorporated by reference into this mitigation measure. The following recommendations shall be addressed and incorporated into the Final Soils Geotechnical Engineering Report:</p> <p><u>Earthwork Considerations</u></p> <p>Earthwork and grading shall be performed in accordance with the applicable grading ordinances of the current California Building Code (CBC), and the following recommendations. The Grading Guidelines included in Appendix D of the <i>Preliminary Geotechnical Evaluation for Proposed Residential Development</i>, prepared by GeoTek, Inc., dated September 12, 2005 outline general procedures and do not anticipate all site-specific situations. In the event of conflict, the following recommendations shall supersede those contained in Appendix D of the <i>Preliminary Geotechnical Evaluation for</i></p>							

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	<p><i>Proposed Residential Development.</i></p> <ul style="list-style-type: none"> <li>• <u>Site Clearing.</u> In areas of planned grading or improvements, the site shall be cleared of vegetation, roots, and debris, and properly disposed of offsite. Any holes resulting from site clearing, tree removal, and/or the backhoe trenches excavated shall be replaced with properly compacted fill materials.</li> <li>• <u>Fills.</u> Any import fill shall consist of relatively low-expansive soils (EI&lt;50) and shall be evaluated by a Registered Civil Engineer/Geotechnical Engineer, approved by the City, prior to arrival at the project site. The fill materials shall be compacted in layers no thicker than 8 inches to at least 90 percent of maximum dry density with a moisture content of at least optimum, as determined in accordance with American Society for Testing and Materials (ASTM) Test Method D1557-00. Those areas to receive fill shall be scarified to a depth of 8</li> </ul>							

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	<p>inches; moisture conditioned to at least optimum moisture content and recompact to at least 90 percent of maximum dry density.</p> <ul style="list-style-type: none"> <li><u>Removals.</u> Existing fill materials shall be subject to complete removal and recompaction within the limits of grading. In those areas where the depth of existing fill materials extends below the groundwater table, the upper eight to 10 feet of soil, along with organic and other deleterious materials, shall be removed.</li> </ul> <p>If saturated and yielding subgrade conditions are encountered upon removal of the upper soils within those areas exhibiting a shallow ground water surface, the contractor shall place uniform sized, ¾-inch crushed rock within the area exhibiting the “pumping” conditions. The crushed rock shall be properly tracked into the underlying soils such that it is adequately intruded into and interlocks with the soils. The necessary thickness of the</p>							



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	<p>crushed rock shall be evaluated during construction. Following the placement and tracking of the gravel layer into the underlying “pumping” soils, Miraafi 600X stabilization fabric (or approved equivalent) shall be placed upon the gravel layer. Fill soils shall then be placed upon the fabric and compacted to a minimum 90 percent relative compaction (based on ASTM test method D1557) until finished grades are reached. The gravel and stabilization fabric shall extend at least 5 feet laterally beyond the limits of the “pumping” areas. These operations shall be performed under the observation and testing of a professional engineer or a certified engineering geologist licensed by the State of California, approved by the City in order to evaluate the effectiveness of these measures and to provide additional recommendations, as warranted.</p> <p>Following the completion of rough grading at the site, settlement monuments shall be installed at finish rough grade.</p>							

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	<p>These monuments shall be established based on a known bench mark and their elevations shall be monitored by a licensed land surveyor on a weekly basis. The surveyor's settlement monument data shall be reviewed weekly by the Registered Civil Engineer/Geotechnical Engineer, approved by the City. This monitoring shall continue until the consolidation is deemed to have sufficiently stabilized. Once it has been concluded that the remaining settlement is within acceptable levels, the settlement monuments may be destroyed and fine grading may proceed.</p> <ul style="list-style-type: none"> <li>• <u>Excavation Characteristics.</u> All temporary excavations for grading purposes and installation of underground utilities shall be constructed in accordance with Occupational Safety and Health Administration (OSHA) guidelines.</li> </ul>							

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	<ul style="list-style-type: none"> <li><u>Expansive Soils.</u> Placement of any clayey soils within three feet of finish grades shall be avoided.</li> </ul> <p><u>Foundation Support</u></p> <ul style="list-style-type: none"> <li><u>Conventional Foundation Recommendations.</u> In the areas where complete removal and recompaction of the upper soils can be accomplished, the proposed residential structures shall be supported on conventional continuous or isolated spread footings bearing entirely upon properly compacted fill materials. Foundations supporting single story structures shall be constructed with an embedment of at least 12 inches below finish grade, while those supporting two-story structures shall be constructed with an embedment of at least 18 inches below finish grade. At these depths, footings shall be designed for an allowable soil bearing value of 2,000 pounds per square foot (psf). This value shall be increased by one-third for loads of short duration, such as wind</li> </ul>							

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	<p>and seismic forces. Continuous footings supporting single-story structures shall have a minimum width of 12 inches, while those supporting two-story structures shall have a minimum width of 15 inches. Based on geotechnical considerations, footings shall be provided with reinforcement consisting of two No. 4 rebars, one top and one bottom. A minimum width of 24 inches for isolated spread footings shall be provided. Passive resistance to lateral loads shall be computed as an equivalent fluid pressure having a density of 250 psf per foot of depth to a maximum earth pressure of 3,000 psf. A coefficient of friction between soil and concrete of 0.30 shall be used with dead load forces. When combining passive and frictional resistance, the passive pressure component shall be reduced by one-third.</p> <ul style="list-style-type: none"> <li>• <u>Special Foundation Systems.</u> In the areas where incomplete removals are performed and/or the potential for seismically</li> </ul>							

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	<p>induced differential settlement exists, special foundation systems such as mat foundations, post-tensioned slabs, or drilled pier foundation systems shall be considered for support of the proposed residential structures.</p> <p>If mat foundations are used to support the proposed residential structures, the mat foundations shall be designed to bridge over voids that may develop under the slab due to differential settlement. The mat foundation shall be founded within compacted fill materials, with a minimum embedment of 18 inches below finish grade. For mats founded on soft, wet, or cohesionless soils, special preparation of the bottom shall be required to support construction traffic.</p> <p>Mat foundations shall be properly reinforced to form a relatively rigid structural unit in accordance with the structural engineers design. For preliminary design purposes, an uncorrected modulus of</p>							

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	<p>subgrade reaction of 100 pounds per cubic inch (pci) shall be assumed. For large foundations, the modulus shall be reduced by 75 percent (i.e., to 25 pci). Actual geotechnical design parameters shall be provided upon completion of a more complete geotechnical evaluation of the proposed building site.</p> <p>If post-tensioned slabs are used to support the proposed residential structures, the structural design of post-tensioned slabs shall follow the recommendations of the Post-Tensioning Institute (PTI) Method and Section 1819 of the 2001 California Building Code (i.e., 1808 [Foundations] and 1808.6.2 [ Slab on Ground Foundations]).</p> <p>Based on the geotechnical data acquired during the subsurface exploration, an allowable bearing capacity of 1,500 psf, and a slab-subgrade friction coefficient of 0.75 shall be used for design of post-tensioned slabs. Final design shall be verified based upon actual soil conditions</p>							

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	<p>encountered and results of laboratory testing performed during or at the completion of site grading.</p> <p>If drilled piers are used to support the proposed residential structures, the drilled piers shall be designed utilizing either end-bearing or skin friction design. Drilled piers shall be embedded at least 5 feet within the alluvial materials or 14 feet below the existing ground surface (whichever is deeper). Design of drilled piers subjected to earthquake loading shall consider the effects of downdrag, due to the potential for liquefaction within portions of the fill.</p> <p>Because of the relatively high ground water level, along with the presence of poorly graded sands within the fill and alluvium, temporary casing or bentonite slurry shall be utilized to support the walls of the shaft prior to the placement of concrete. Further, the cleaning of loose slough from the bottom of the shaft excavation shall be warranted for drilled piers that</p>							

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	<p>will derive their support from end-bearing conditions.</p> <ul style="list-style-type: none"> <li>• <u>Seismic Design Parameters.</u> Seismically resistant structural design in accordance with local building ordinances shall be followed during the design of all structures. For the purpose of seismic design, a Type B seismic source (L.A. Basin segment of the Newport-Inglewood Fault) located less than 2 kilometers from the site shall be used.</li> <li>• <u>Foundation Setbacks.</u> Where applicable, the following setbacks shall apply to all foundations: <ul style="list-style-type: none"> <li>○ The outside bottom edge of all footings shall be set back a minimum of <math>H/3</math> (where H is the slope height) from the face of any descending slope. The setback shall be at least seven feet and need not exceed 20 feet.</li> <li>○ The bottom of all footings for structures near retaining walls shall be deepened so</li> </ul> </li> </ul>							



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	<p>as to extend below a 1:1 projection upward from the bottom inside edge of the wall stem.</p> <ul style="list-style-type: none"> <li>○ The bottom of any existing foundations for structures shall be deepened so as to extend below a 1:1 projection upward from the bottom of the nearest excavation.</li> <li>● <u>Slab-On-Grade.</u> Where applicable, concrete slabs (including the mat foundations recommended above) shall be a minimum of four inches thick and reinforced as per structural engineer requirements. Control joints shall be provided to help reduce random cracking. Slabs shall be underlain by a four inch thick capillary break layer consisting of clean sand (S.E. of 30 or greater). Where moisture condensation is undesirable, all slabs shall be underlain with a minimum six mil polyvinyl chloride membrane, sandwiched between two layers of clean sand (S.E. 30 or</li> </ul>							

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	<p>greater), each being at least two inches thick. Care shall be taken to adequately seal all seams and not puncture or tear the membrane. The sand shall be proof rolled. This recommendation is based on soil support characteristics only. The structural engineer shall design the actual slab and beam reinforcement based on expansion indices of the finish grade soils, actual loading conditions, and possible concrete shrinkage.</p> <ul style="list-style-type: none"> <li>• <u>Soil Corrosivity.</u> A corrosion engineer shall be consulted to provide recommendations for proper protection of buried metal pipes at this site.</li> <li>• <u>Utilities.</u> Due to the project site's susceptibility to liquefaction and a considerable amount of seismically-induced settlement and lateral spreading, consideration shall be given to "flexible" design for on-site utility lines and connections. Except where extending perpendicular to/under</li> </ul>							

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	<p>proposed foundations, utility trenches shall be constructed outside a 1:1 projection from the base-of-foundations. Trench excavations for utility lines which extend under structural areas shall be properly backfilled and compacted. Utilities shall be bedded and backfilled with clean sand or approved granular soil to a depth of at least one foot over the pipe. This backfill shall be uniformly watered and compacted to a firm condition for pipe support. The remainder of the backfill shall be typical on-site soil or imported soil which shall be placed in lifts not exceeding eight inches in thickness, watered or aerated to 0 to 3 percent above the optimum moisture content, and mechanically compacted to at least 90 percent of maximum dry density (based on ASTM D1557).</p> <p><u>Concrete Construction</u></p> <p>Concrete construction shall follow the California Building Code and American</p>							

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	<p>Concrete Institute guidelines regarding design, mix placement and curing of the concrete.</p> <ul style="list-style-type: none"> <li>• <u>Cement Type.</u> Type I1 cement or an equivalent shall be used in those concrete elements that will be in contact with the upper soils.</li> <li>• <u>Control Flatwork.</u> Control joints shall be provided in accordance with American Concrete Institute Guidelines to control cracking of exterior concrete flatwork (patios, walkways, driveways, etc.). Other methods to control cracking shall include careful control of water/cement ratios in the concrete, along with taking appropriate curing precautions during the placement of concrete in hot or windy weather.</li> </ul> <p><u>Retaining Wall Design and Construction</u></p> <p>Recommendations presented herein apply to typical masonry or concrete vertical retaining walls to a maximum height of 10 feet. Additional review and</p>							

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	<p>recommendations shall be required for higher walls. Foundations for retaining walls embedded a minimum of 18 inches into compacted fill shall be designed using a net allowable bearing capacity of 2,000 psf. An increase of one-third shall be applied when considering short-term live loads (e.g., seismic and wind loads). The passive earth pressure shall be computed as an equivalent fluid having a density of 250 psf per foot of depth, to a maximum earth pressure of 3,000 psf. A coefficient of friction between soil and concrete of 0.30 shall be used with dead load forces. When combining passive pressure and frictional resistance, the passive pressure component shall be reduced by one-third. An equivalent fluid pressure approach shall be used to compute the horizontal active pressure against the wall. The appropriate fluid unit weights are provided below for specific slope gradients of retained materials.</p> <table><tr><th>Surface Slope of Retained Materials (H:V)</th><th>Equivalent Fluid Pressure (PCF)</th></tr><tr><td>Level</td><td>35</td></tr><tr><td>2:1</td><td>55</td></tr></table> <p>The above equivalent fluid weights do not include other superimposed loading conditions such as expansive soil,</p>	Surface Slope of Retained Materials (H:V)	Equivalent Fluid Pressure (PCF)	Level	35	2:1	55							
Surface Slope of Retained Materials (H:V)	Equivalent Fluid Pressure (PCF)													
Level	35													
2:1	55													

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	<p>vehicular traffic, structures, seismic conditions or adverse geologic conditions.</p> <ul style="list-style-type: none"> <li>• <u>Wall Backfill and Drainage.</u> The onsite sandy materials possessing a low expansion potential that are used for backfill shall be screened of greater than three inch size gravels. If other materials are present the parameters provided shall be reviewed and if necessary, modification to the wall designs shall be made. The backfill materials shall be placed in lifts no greater than eight inches in thickness and compacted at 90 percent relative compaction in accordance with ASTM Test Method D1557-00. Proper surface drainage shall be provided and maintained.</li> </ul> <p>Retaining walls shall be provided with an adequate pipe and gravel back drain system to prevent build up of hydrostatic pressures. Backdrains shall consist of a 4-inch diameter perforated PVC pipe embedded in a minimum of one cubic foot per lineal foot of 3/8 to one inch clean crushed</p>							

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	<p>rock or equivalent, wrapped in filter fabric (Mirafi 140N or an approved equivalent). The drain system shall be connected to a suitable outlet. A minimum of two outlets shall be provided for each drain section.</p> <p>Walls from two to four feet in height shall be drained using localized gravel packs behind weep holes at 10 feet maximum spacing (e.g., approximately 1.5 cubic feet of gravel in a woven plastic bag). Weep holes shall be provided or the head joints omitted in the first course of block extended above the ground surface.</p> <p><u>Post Construction</u></p> <ul style="list-style-type: none"> <li><u>Landscape Maintenance and Planting.</u> Positive surface drainage away from graded slopes shall be maintained and only the amount of irrigation necessary to sustain plant life shall be provided for planted slopes. Plants selected for landscaping shall be lightweight, deep-rooted types that require</li> </ul>							

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	<p>little water and are capable of surviving the prevailing climate.</p> <p>Over watering shall be avoided. The soils shall be maintained in a solid to semi-solid state as defined by the materials' Atterberg Limits. Care shall be taken when adding soil amendments to avoid excessive watering. Leaching as a method of soil preparation prior to planting shall not occur.</p> <p>Planting placed adjacent to structures in planter or lawn areas shall be avoided. If used, waterproofing of the foundation and/or subdrains shall occur.</p> <ul style="list-style-type: none"> <li>• <u>Drainage</u>. Positive site drainage shall be maintained at all times. Drainage shall not flow uncontrolled down any descending slope. Water shall be directed away from foundations and not allowed to pond or seep into the ground. Pad drainage shall be directed toward approved area(s). Positive drainage shall not be blocked by other improvements.</li> </ul>							



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	<p>A de-watering system shall be implemented if below-grade construction (i.e., basements, etc.) is planned to extend down to or below depths of between nine and 15 feet below existing site grades.</p> <p>Implementation and operation (as deemed necessary) of de-watering procedures/equipment both during subterranean construction (if planned) and throughout the lifetime of the structure(s) shall occur. A contractor specializing in the design and implementation of de-watering systems shall be consulted prior to the beginning of construction activities.</p> <p><u>Plan Review and Construction Observations</u></p> <p>Site grading, specifications, and foundation plans shall be reviewed by a Geotechnical Engineer, approved by the City, prior to construction to verify conformance with the above recommendations. It is recommended that a Geotechnical Engineer be present during site grading and foundation</p>							

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	<p>construction to check for proper implementation of the geotechnical recommendations. The Geotechnical Engineer shall perform at least the following duties:</p> <ul style="list-style-type: none"> <li>• Observe site clearing and grubbing operations for proper removal of all unsuitable materials.</li> <li>• Observe and test bottom of removals prior to fill placement.</li> <li>• Evaluate the suitability of onsite and import materials for fill placement, and collect soil samples for laboratory testing where necessary.</li> <li>• Observe the fill for uniformity during placement including utility trenches. Also, test the fill for field density and relative compaction.</li> <li>• Observe and probe foundation materials to confirm suitability of bearing materials and proper footing dimensions.</li> </ul>							

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GEO-2	Prior to issuance of any grading permit, the Grading Plan shall incorporate all engineering recommendations contained within the Final Soils/Geotechnical Engineering Report for the proposed project during project site design and construction, in order to reduce any potential soil and geotechnical hazards at the project site. These recommendations shall be stipulated in the construction contracts and specifications.	Applicant/ Contractor	Prior to Issuance of Grading Permit; During Construction	City Engineer	Prior to Issuance of Grading Permit; During Construction			
GEO-3	Prior to issuance of any building permit for development of each residential lot, the building and engineering plans shall incorporate all engineering recommendations contained within the Final Soils/Geotechnical Engineering Report for the proposed project during lot site design and construction, in order to reduce any potential soil and geotechnical hazards at the residential lots. These recommendations shall be stipulated in the building and engineering plans and specifications.	Applicant/ Contractor	Prior to Issuance of Grading Permit; During Construction	City Engineer	Prior to Issuance of Grading Permit; During Construction			
<b>HAZARDS AND HAZARDOUS MATERIALS</b>								
HAZ-1	Prior to demolition activities, an asbestos survey shall be conducted by an Asbestos Hazard Emergency Response Act (AHERA) and Cal OSHA certified building inspector to determine the presence or absence of asbestos containing-materials (ACMs). If ACMs are located, abatement of asbestos shall be	Applicant	Prior to Demolition Activities	Director of Development Services or Designee	Prior to Demolition Activities			

Mitigation Number	Mitigation Measure	Implementation Responsibility	Timing	Monitoring Responsibility	Timing	VERIFICATION OF COMPLIANCE		
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	completed prior to any activities that would disturb ACMs or create an airborne asbestos hazard. Asbestos removal shall be performed by a State certified asbestos containment contractor in accordance with the South Coast Air Quality Management District (SCAQMD) Rule 1403.							
HAZ-2	If paint is separated from building materials (chemically or physically) during demolition of the structures, the paint waste shall be evaluated independently from the building material by a qualified Environmental Professional. If lead-based paint is found, abatement shall be completed by a qualified Lead Specialist prior to any activities that would create lead dust or fume hazard. Lead-based paint removal and disposal shall be performed in accordance with California Code of Regulation Title 8, Section 1532.1, which specifies exposure limits, exposure monitoring and respiratory protection, and mandates good worker practices by workers exposed to lead. Contractors performing lead-based paint removal shall provide evidence of abatement activities to the City Engineer.	Applicant	During Demolition Activities	Director of Development Services or Building Official	During Demolition Activities			
HAZ-3	The Applicant shall confirm whether or not utilities are present on-site. Should utilities be present and would need to be removed, the Applicant shall remove on-site utilities in consultation with the City	Applicant	Prior to Issuance of a Grading Permit	City Engineer	Prior to Issuance of a Grading Permit			

Mitigation Number	Mitigation Measure	Implementation Responsibility	Timing	Monitoring Responsibility	Timing	VERIFICATION OF COMPLIANCE		
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	Engineer. Should hazardous materials be anticipated in association with utility removal, the Applicant and the City Engineer shall further consult with the Orange County Health Care Agency regarding proper utility removal and worker safety protections.							
HAZ-4	Prior to site disturbance within the 1 <sup>st</sup> Street right-of-way, the contractor shall contact Dig Alert (Underground Service Alert of Southern California) in order to confirm the location of the existing oil pipe lines. The contractor shall coordinate with the owner(s) of the existing oil pipe lines in order to ensure that a rupture during disturbance activities does not occur.	Contractor	Prior to Site Disturbance	City Engineer	Prior to Site Disturbance			
HAZ-5	<p>If unknown wastes or suspect materials are discovered during construction by the contractor that are believed to involve hazardous waste or materials, the contractor shall comply with the following:</p> <ul style="list-style-type: none"> <li>• Immediately cease work in the vicinity of the suspected contaminant, and remove workers and the public from the area;</li> <li>• Notify the City Engineer of the City of Seal Beach;</li> </ul>	Contractor	During Construction	City Engineer	During Construction			

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	<ul style="list-style-type: none"> <li>Secure the area as directed by the City Engineer; and</li> <li>Notify the Orange County Health Care Agency's Hazardous Materials Division's Hazardous Waste/Materials Coordinator (or other appropriate agency specified by the City Engineer). The Hazardous Waste/Materials Coordinator shall advise the responsible party of further actions that shall be taken, if required.</li> </ul>							
HAZ-6	The contractor shall verify that all imported soils, and on-site soils proposed for fill, are not contaminated with hazardous materials above regulatory thresholds in consultation with a Phase II/Site Characterization Specialist. If soils are determined to be contaminated above regulatory thresholds, these soils shall not be used as fill material within the boundaries of the project site, unless otherwise specified by a regulatory agency that has jurisdiction to oversee hazardous substance cleanup (e.g., Department of Toxic Substances Control, Regional Water Quality Control Board, Orange County Health Care Agency, etc.).	Contractor	During Construction	City Engineer	During Construction			

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HYDROLOGY AND WATER QUALITY								
HWQ-1	Prior to Grading Permit issuance and as part of the project's compliance with the NPDES requirements, a Notice of Intent (NOI) shall be prepared and submitted to the State Water Resources Quality Control Board (SWRCB), providing notification and intent to comply with the State of California General Permit.	Applicant	Prior to Issuance of Grading Permit	City Engineer	Prior to Issuance of Grading Permit			
HWQ-2	The proposed project shall conform to the requirements of an approved Storm Water Pollution Prevention Plan (SWPPP) (to be applied for during the Grading Plan process) and the NPDES Permit for General Construction Activities No. CAS000002, Order No, 2009-0009-DWQ, including implementation of all recommended Best Management Practices (BMPs), as approved by the State Water Resources Quality Control Board (SWRCB).	Applicant	During Construction	City Engineer	During Construction			
HWQ-3	The range of Best Management Practices (BMPs) outlined in Section 5.0 of the <i>Department of Water and Power Specific Plan Amendment Environmental Impact Report Hydrology and Water Quality Technical Appendix</i> (Hydrology Study), prepared by RBF Consulting, (November 2011), and/or equivalent and related provisions shall be incorporated into the project's Storm Water Pollution Prevention Plan (SWPPP). The Hydrology Study is included in <u>Appendix 11.10, Hydrology and</u>	Applicant	During Construction	City Engineer	During Construction			

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	<u>Water Quality Technical Study</u> of this EIR and is incorporated by reference into this mitigation measure.							
HWQ-4	Upon completion of project construction, the project applicant shall submit a Notice of Termination (NOT) to the State Water Resources Quality Control Board (SWRCB) to indicate that construction is completed.	Applicant	Prior to Issuance of a Building Permit	City Engineer	Prior to Issuance of a Building Permit			
HWQ-5	Prior to issuance of a grading permit for Tentative Tract Map 17425, the project applicant shall provide detailed basin sizing calculations and design drawings demonstrating the detention basins adequately mitigate the 2-year and 25-year storm events, consistent with the hydrology analysis provided in Section 5.0 of the <i>Department of Water and Power Specific Plan Amendment Environmental Impact Report Hydrology and Water Quality Technical Appendix</i> (Hydrology Study), prepared by RBF Consulting, (November 2011). The Hydrology Study is included in <u>Appendix 11.10, Hydrology and Water Quality Technical Study</u> of this EIR and is incorporated by reference into this mitigation measure.	Applicant	Prior to Issuance of Grading Permit	City Engineer	Prior to Issuance of Grading Permit			
HWQ-6	In conjunction with final project design and when precise engineering occurs, the project applicant shall demonstrate no adverse flooding impacts would occur at the intersection of Marina Drive and 1 <sup>st</sup> Street during the 100-year storm event. The analysis shall be submitted to the City	Applicant	Prior to Issuance of Grading Permit	City Engineer	Prior to Issuance of Grading Permit			



Mitigation Number	Mitigation Measure	Implementation Responsibility	Timing	Monitoring Responsibility	Timing	VERIFICATION OF COMPLIANCE		
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	Engineer prior to recordation of the Final Tentative Tract Map 17425 and prior to issuance of the grading permit.							
HWQ-7	Prior to issuance of a grading permit for Tentative Tract Map 17425, the project applicant shall submit a Final Water Quality Management Plan for approval by the City Engineer that complies with the requirements of the latest Orange County Public Works Drainage Area Management Plan.	Applicant	Prior to Issuance of a Grading Permit	City Engineer	Prior to Issuance of a Grading Permit			
HWQ-8	Prior to initiation of grading activities for the open space/passive park, the City shall prepare a Water Quality Management Plan for approval by the City Engineer that complies with the requirements of the latest Orange County Public Works Drainage Area Management Plan.	City Engineer	Prior to Issuance of Grading Permit	City Engineer	Prior to Issuance of Grading Permit			
<b>PUBLIC SERVICES AND UTILITIES</b>								
PSU-1	<p>The following conditions required by the Orange County Fire Authority (OCFA) shall be incorporated into the plans and specifications for the proposed Tentative Tract Map No. 17425, and submitted to OCFA for approval prior to the issuance of building permits:</p> <ul style="list-style-type: none"> <li>All traffic signals on public access ways shall include optical preemption devices.</li> </ul>	Applicant	Prior to Issuance of Building Permits	Orange County Fire Authority	Prior to Issuance of Building Permits; Plan Check			

Mitigation Number	Mitigation Measure	Implementation Responsibility	Timing	Monitoring Responsibility	Timing	VERIFICATION OF COMPLIANCE		
						Initials	Date	Remarks
	<ul style="list-style-type: none"> <li>All electrically operated gates shall include emergency opening devices, as approved by OCFA.</li> </ul>							
PSU-2	<p>The Utility Plan for Tentative Tract Map No. 17425 shall include the following sewer pipeline provisions, which shall be subject to the review and approval of the City's Public Works Engineer:</p> <ul style="list-style-type: none"> <li>A new eight-inch sewer pipeline from the project site, across 1<sup>st</sup> Street, connecting to the existing six-inch pipeline shall be constructed within the alley to the east of the project site between 1<sup>st</sup> and 2<sup>nd</sup> Streets; and</li> <li>The northern portion (from Central Way to the alley parallel to and southwest of Central Avenue) of the existing pipeline within the alley to the east of the project site between 1<sup>st</sup> and 2<sup>nd</sup> Streets shall be upgraded to an eight-inch pipeline.</li> </ul> <p>The new and upgraded sewer pipeline dimensions and locations shall be determined in consultation with the City's Public Works Engineer.</p>	Applicant	During Finalization of Plans; Prior to Issuance of Building Permits	City Engineer	During Finalization of Plans; Plan Check			